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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/674,402	01/02/2001	P.S. Ramanujam	MBHB00-1120	8359

20306 7590 02/13/2007  
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EXAMINER
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CHU, KIM KWOK

ART UNIT	PAPER NUMBER
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2627

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 09/674,402	<b>Applicant(s)</b> RAMANUJAM ET AL.	
	<b>Examiner</b> Kim-Kwok CHU	<b>Art Unit</b> 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on Remarks filed on 12/7/2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 11 and 16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/31/2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. PCT/HU99/00035.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Remarks***

1. Applicant's Remarks filed on December 7, 2006 has been fully considered but it is not persuasive.

Applicant states that it would not be obvious to one of ordinary skill in the art to employ an aspherical plastic objective lens to correct for chromatic aberration (page 10 of the Remarks, lines 18 and 19). To support his view, Applicant cites a most obvious solution from a 1981 edition of "Fundamentals of Optics" by F.A. Jenkins and H.E. White, McGraw Hill where the commonest method is to employ two thin lenses in contact, one made of crown glass and .... (page 10 of the Remarks, lines 5-8). Accordingly, in the field of optical recording and reading apparatus, an aspherical objective lens made of a plastic material is very common in a CD player. For example, a U.S. Patent 4,909,616 by Arai disclosed that the plastic aspherical objective lens is manufactured in volume inexpensively (column 5, lines 14-19). Furthermore, Arai mentions that hybrid lenses can be used as an objective lens so that the aberration caused by the mode hop of a laser source can be corrected (column 5, lines 20-35). To support this fact, another U.S. Patent 5,543,966 by Meyers of Eastman Kodak Company disclosed that a hybrid aspherical objective lens made of plastic is used to correct chromatic aberration.

**Claim Rejections - 35 USC § 103**

2. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

*(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.*

3. Claims 11 and 16 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Faruqi et al. (WO 97/02563) in view of Chen (U.S. Patent 5,257,133) and Tanaka et al. (U.S. Patent 5,684,641).

Faruqi teaches an apparatus for the writing and reading of a holographic recording medium very similar to that of the present invention. For example, Faruqi teaches the following:

(a) with respect to Claim 11, the recording medium 25 is an optical card (Fig. 7; page 17, lines 8-10); a recording medium 25 holding an/or positioning mechanism 30 (Figs. 4 and 5); page 15, lines 9 and 10) movable or fixed read and write optics 16-24 (Fig. 4); the write optics 16 comprising a polarized writing light source (Figs. 4 and 15; laser 1 is inherently a polarized light source and its light beam is further polarized by modulator 73); page 21, lines 13-15); polarizing selector means 57 for

separating an/or combining the reference beam and an object beam (Figs. 4 and 11; page 21, lines 27-31); an object beam modulating means 24 (Fig. 4); a polarization wave plate 56 (Fig. 11); an objective lens 58 for imaging the object beam onto a recording layer (Fig. 18; page 21, last line, page 22, lines 1 and 2); the read optics 17, 24 comprising a polarized reading light source 17 (Figs. 4 and 15); the read optics includes a polarizing selector 57 and/or spatial filtering means 39, 42 for separating and/or combining a reference beam and an image beam (Figs. 6 and 11); a light detector 44, 45 and an objective lens 58 for imaging the image beam onto the light detector (Figs. 4, 6 and 11); the wavelength of the reading light source 17 is different from the writing light source 16 (Fig. 4; page 11, lines 23-25); the read optics 17 comprise wavelength distortion correcting means 24, 27 for correcting the distortion of the reconstructed image caused by the difference in the wavelength of the reading and writing light (Figs. 4 and 11; signal processor 27 and optical head 24 reconstruct the stored image without error).

However, Faruqi does not teach the following:

(i) with respect to Claims 11 and 16, the wavelength distortion (chromatic or spherical aberration) correcting means is an aspherical plastic objective lens.

Chen teaches the following:

(i) a chromatic aberration caused by difference in

wavelengths can be corrected by an aspherical objective lens (claim 4, column 7, lines 61-63).

Tanaka teaches the following:

(i) the aspherical objective lens is made of plastic (column 6, claim 3).

A focused light beam has an aberration affected by its wavelengths spectrum. In order to correct this kind of focusing distortion, it would have been obvious to one of ordinary skill in the art to replace Chen's aspherical objective lens with Faruqi's optical lens 58 to focus the write and read light beams, because Chen's aspherical lens compensate the chromatic and spherical aberrations of the focused light beams.

Furthermore, although both Faruqi and Chen do not disclose their objective lens are made of plastics, for a more cost effective optical head, it would have been obvious to one of ordinary skill in the art to replace the material of Chen's silicon aspherical lens with Tanaka's plastic aspherical lens, because a plastic lens is cheaper to make and lighter in weight than a silicon lens.

(b) with respect to Claim 16, Faruqi further teaches that the read optics and the write optics have a common objective lens (Fig. 4; in optical head 24).

(c) with respect to Claim 16, Faruqi further teaches that the common objective lens 58 is for the correction of the

wavelength distortion (Fig. 4; optical head 24 reconstruct the stored image without error).

(d) with respect to Claim 16, Faruqi further teaches that the objective lens 58 (in 24) has a central region and an annular region in its aperture (Fig. 4; inherent feature of an objective lens having a focusing region consists of a central region surrounded by an annular region).

(e) with respect to Claim 16, Faruqi further teaches that the central region is tuned (utilized) to the wavelength of the writing light source 16 for focusing the write object beam onto the recording layer (Fig. 4).

(f) with respect to Claim 16, Faruqi further teaches that the central region is tuned (utilized) the wavelength of the read light source 17 for imaging the read object beam onto the detector (Fig. 4).

(g) with respect to Claim 16, Faruqi further teaches that the annular region of the lens is tuned (utilized) to the wavelength of the read light source 17 for imaging the reflected object beam onto the detector (Fig. 4; the inherent objective lens with an outside region surrounding the inside region is used for focusing the write and read light beams).

**Prior Art**

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Arai (4,909,616) is pertinent because Arai teaches a plastic aspherical objective lens.

Meyers (5,543,966) is pertinent because Meyers teaches a plastic hybrid objective lens for correcting chromatic aberration.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action



6. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Kim CHU whose telephone number is (571) 272-7585 between 9:30 am to 6:00 pm, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea Wellington, can be reached on (571) 272-4483.

The fax number for the organization where this application or proceeding is assigned is (571) 273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished application is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9191 (toll free).

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Examiner AU2627  
February 5, 2007  
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SUPERVISORY PATENT EXAMINER